

PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in or relating to Dispensing Containers.

We, THE METAL BOX COMPANY LIMITED, a Company incorporated under the laws of Great Britain, of The Langham, Portland Place, London, W.1, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to dispensing containers.

Dispensing containers frequently comprise an end secured to the body of the container, the end having a metal hood formed with dispensing apertures in the crown, a perforated shutter being disposed in the hood to obturate the apertures or to permit dispensing through the hood. Sometimes the shutter is rotatable and sometimes movable in a longitudinal direction. Alternatively the neck is closed at the top and the top is apertured, the hood being rotatable about the neck to obturate the apertures in the top, or to cause registration of the apertures in the crown with those in the top.

25 A main object of the present invention is to simplify such construction and facilitate assembly of the components in a container at the end thereof for example.

30 Another object is to simplify the construction of dispensing means mounted on an end of the kind in which the hood is rotatably mounted on a neck and to facilitate assembly of such constructions.

35 According to the present invention a hood for assembling on a neck of a container having longitudinal ribs, comprises a perforated crown and a downwardly extending resilient wall, an inward formation on the lower end of the wall disposed and shaped when the hood is forced over the neck to engage beneath the ribs on the neck, and one or more projections on the wall between the crown and the inward projection of the

lower end of the wall, whereby rotary movement of the hood with respect to the neck is permitted within the limits permitted by the ribs and projections.

Further according to the invention a combined container neck and hood comprises a neck having an apertured upper end through which the commodity in the container may be dispensed from the container and a plurality of widely spaced parallel ribs disposed longitudinally on the outer surface of but shorter than the neck, beneath which the inward formation on the hood wall is disposed to snap by virtue of the limited elasticity of the wall when the hood is forced over the ribs, the inward projections on the hood and the ribs on the neck being disposed and shaped to co-operate to limit relative rotational movement between the hood and the neck, means being provided for obturating at will the aperture in the crown of the hood.

If a shutter is provided in the combined neck and hood, the crown of the hood may be moulded with diametrically opposed slots to accommodate the shutter, and the mouth of the neck may be slightly inturned to act as an additional support and as a scraper for the shutter. The end comprising a neck having ribs disposed longitudinally thereof may itself be a moulded component of a combined neck and hood according to the invention.

The invention is particularly applicable to the construction of a combined neck and hood in which the hood rotates on the end to permit dispensing or to obturate the dispensing openings.

In assembling constructions of a combined neck and hood according to the invention, the hood is forced over the neck, the inward formation on the hood tightly fitting the ribs on the neck, and during such operation the wall of the hood is slightly extended

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Price 3s. 6d.



radially and, as soon as the hood passes beyond the ribs, the wall of the hood contracts to original form, and provides a captive closure over the neck which is difficult to remove since the inward formation on the hood snaps under the ribs, thus interlocking the hood with the neck.

In order that the invention may be more clearly understood a preferred embodiment thereof, as applied to the construction of a hood intended to rotate about the usual metal neck having an apertured top on a metal end of a container will now be described by way of example with reference to the accompanying drawings in which:

Fig. 1 is a sectional elevation of such a hood, and the metal neck to which it is to be applied;

Fig. 2 is a half plan of the hood in Fig. 1; Fig. 3 is a half sectional plan on the line III—III of Fig. 1;

Fig. 4 is a view similar to Fig. 3, showing the hood applied to a neck;

Fig. 5 is a part sectional elevation showing a neck of an end for a container with the hood applied thereto; and

Fig. 6 is a sectional elevation of a modified form of hood with a sliding shutter.

The hood 1 shown in Figs. 1 to 5 is moulded from a thermoplastic material, such as polythene, and is formed with a continuous rib 2 extending inwardly from the inner periphery of wall 3 of the hood in spaced relation from the bottom of the wall. The wall may be recessed as indicated at 4, on the inside below the inward rib 2 to the bottom of the wall 3, thus providing a reduced wall thickness below the inward rib 2.

The crown of the hood 1 is formed with a number of dispensing perforations 5 as shown in Fig. 2.

Moulded on the inner face of the wall 3 of the hood 1 is a pair of parallel spaced ribs 6 which extend from the circumferential rib 2 to the crown of the hood 1. As shown in Fig. 3, the height of the ribs 6 from the wall 3 of the hood is somewhat less than that of the rib 2.

The outer face of the hood wall 3 is formed with facets or flutes, as indicated at 7, to facilitate rotation of the hood when in use.

The neck 8 of the metal end 9 of a container on which the hood is to be mounted is formed with a number of perforations disposed so that, when the hood 1 is mounted on the end 9 they will be in register with the perforations 5 of the hood in one position of rotation of the hood 1 relative to the neck 8. The neck 8 is also formed with a number of outwardly directed longitudinal ribs 10 which extend from the top of the neck 8 to a shallow recess 11 extending peripherally about the base of the neck. The

neck 8 may conveniently have three such ribs 10 spaced at angles of 120° about the centre of the neck, or there may be four such ribs spaced at 90° .

In use the hood 1 is applied to the neck 8, the reduced thickness of the hood at the bottom of the wall 3 facilitating the springing of the circumferential rib 2 over the ribs 10 of the neck 8 into the circumferential recess 11 at the lower end of the ribs 10. The inherent resiliency of the material from which the hood is made ensures the desired interlock between the two members which practically speaking makes the hood a rotatable captive closure. The height of the ribs 10 is such that they act as distance pieces between the wall 3 of the hood 1 and the neck 8, and the height of the pair of parallel ribs 6 on the inner wall of the hood is such that they project to the neck 8. The spacing of the ribs 6 and their disposition relative to the dispensing perforations 5 in the hood, and the location of the ribs 10 on the neck 8 relative to the perforations in the latter is such that when the hood 1 is rotated in one direction on the neck 8 one rib 6 will abut a rib 10 on the neck and when the hood is rotated in the other direction the other rib 6 will abut the rib 10 on the neck to define limit positions of movement of the hood, the dispensing perforations on the hood and neck being in register in one limit position and obturated in the other position.

In the form of construction shown in Fig. 6 the hood 1 has a shutter 12 accommodated in diametrically opposed slots 13 moulded in the crown of the hood. The mouth of the open topped neck 14 is slightly inturned as shown at 15 to act as an additional support and as a scraper for the shutter 12. In other respects the hood and neck is constructed as described with reference to Figs. 1 to 5.

The invention comprises the construction of a neck for a container to receive a hood in the manner described, that is to say, it comprehends a neck of an end for a container which neck is provided with spaced ribs disposed longitudinally of the neck, disposed to receive a hood with a depending wall having a continuous inward rib near the bottom of the hood wall, the rib having an inner diameter slightly less than the diameter of the circumscribing circle of the ribs in the neck i.e. the neck diameter across a rib, the wall of the hood being recessed in the inside from the inward rib to the bottom edge of the wall.

Although in the embodiment of the invention herein given reference is made to the employment of a thermoplastic material for the hood, the invention can be attained by the use of natural or synthetic rubber or a thermosetting plastic, and if a metal hood

is employed the latter will be formed with an inward bead to constitute the inward formation on the hood which co-operates with the longitudinal ribs in the neck, in accordance with the invention, to retain the hood in position, and the skirt of the hood below the bead may be slit to increase the resiliency of the skirt of the cap.

What we claim is:—

1. A hood for assembling on a neck of a container having longitudinal ribs, comprising a perforated crown and a downwardly extending resilient wall, an inward formation on the lower end of the wall disposed and shaped when the hood is forced over the neck to engage beneath the ribs on the neck, and one or more projections on the wall between the crown and the inward projection of the lower end of the wall, whereby rotary movement of the hood with respect to the neck is permitted within the limits permitted by the ribs and projections.

2. A hood according to Claim 1, wherein the inward formation on the wall comprises a continuous inward rib, the wall of the hood being recessed on the inside from the inward rib to the bottom edge of the wall.

3. A hood according to Claims 1 or 2 wherein the crown of the hood has diametrically opposed slots and a shutter slidably arranged in the slots has apertures disposed to register with the perforations in the crown, whereby the shutter can be made to slide to and from the obturating position.

4. A combined container neck having a hood according to Claims 1, 2 or 3, com-

prising a neck having an apertured upper end through which the commodity in the container may be dispensed from the container and a plurality of widely spaced parallel ribs disposed longitudinally on the outer surface but shorter than the neck beneath which the inward formation on the hood wall is disposed to snap by virtue of the limited elasticity of the wall when the hood is forced over the ribs, the inward projections on the hood wall and the ribs on the neck being disposed and shaped to co-operate to limit relative rotational movement between the hood and the neck, means being provided for obturating at will the perforations in the crown of the hood.

5. A combined neck and hood according to Claim 4, when appendant to Claims 1 or 2, wherein the neck has a perforated crown whereby relative rotation of the hood with respect to the neck will obturate the neck perforations or close them.

6. A hood substantially as hereinbefore described with reference to Figures 1—5 or Figure 6 of the accompanying drawings.

7. In combination an end for a container and a hood therefor substantially as hereinbefore described with reference to Figures 1—5 or Figure 6 of the accompanying drawings.

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PROVISIONAL SPECIFICATION.

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This invention relates to dispensing containers.

Dispensing containers frequently comprise an end secured to the body of the container, the end having a metal hood formed with dispensing apertures in the crown, a perforated shutter being disposed in the hood to obturate the apertures or to permit dispensing through the hood. Sometimes the shutter is rotatable and sometimes movable in a longitudinal direction. Alternatively the neck is closed at the top and the top is apertured, the hood being rotatable about the neck to obturate the apertures in the top, or to cause registration of the aper-

tures in the crown with those in the top.

A main object of the present invention is to simplify such construction and facilitate assembly of the components in an end.

Another main object is to simplify the construction of dispensing means mounted on an end of the kind in which the hood is rotatably mounted on the neck and facilitate assembly of such construction.

Accordingly, the present invention comprises an end for a container having a neck through which the commodity in the container, to which the end is to be applied, passes in dispensing from the container, and a hood of resilient material for the neck, having dispensing apertures in the crown thereof, a plurality of widely spaced parallel ribs disposed longitudinally on the neck each shorter than the length of the neck, an inward formation on the hood disposed to snap under the ribs by virtue of the limited



is employed the latter will be formed with an inward bead to constitute the inward formation on the hood which co-operates with the longitudinal ribs in the neck, in accordance with the invention, to retain the hood in position, and the skirt of the hood below the bead may be slit to increase the resiliency of the skirt of the cap.

What we claim is:—

1. A hood for assembling on a neck of a container having longitudinal ribs, comprising a perforated crown and a downwardly extending resilient wall, an inward formation on the lower end of the wall disposed and shaped when the hood is forced over the neck to engage beneath the ribs on the neck, and one or more projections on the wall between the crown and the inward projection of the lower end of the wall, whereby rotary movement of the hood with respect to the neck is permitted within the limits permitted by the ribs and projections.

2. A hood according to Claim 1, wherein the inward formation on the wall comprises a continuous inward rib, the wall of the hood being recessed on the inside from the inward rib to the bottom edge of the wall.

3. A hood according to Claims 1 or 2 wherein the crown of the hood has diametrically opposed slots and a shutter slidably arranged in the slots has apertures disposed to register with the perforations in the crown, whereby the shutter can be made to slide to and from the obturating position.

4. A combined container neck having a hood according to Claims 1, 2 or 3, com-

prising a neck having an apertured upper end through which the commodity in the container may be dispensed from the container and a plurality of widely spaced parallel ribs disposed longitudinally on the outer surface but shorter than the neck beneath which the inward formation on the hood wall is disposed to snap by virtue of the limited elasticity of the wall when the hood is forced over the ribs, the inward projections on the hood wall and the ribs on the neck being disposed and shaped to co-operate to limit relative, rotational movement between the hood and the neck, means being provided for obturating at will the perforations in the crown of the hood.

5. A combined neck and hood according to Claim 4, when appendant to Claims 1 or 2, wherein the neck has a perforated crown whereby relative rotation of the hood with respect to the neck will obturate the neck perforations or close them.

6. A hood substantially as hereinbefore described with reference to Figures 1—5 or Figure 6 of the accompanying drawings.

7. In combination an end for a container and a hood therefor substantially as hereinbefore described with reference to Figures 1—5 or Figure 6 of the accompanying drawings.

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Dispensing containers frequently comprise an end secured to the body of the container, the end having a metal hood formed with dispensing apertures in the crown, a perforated shutter being disposed in the hood to obturate the apertures or to permit dispensing through the hood. Sometimes the shutter is rotatable and sometimes movable in a longitudinal direction. Alternatively the neck is closed at the top and the top is apertured, the hood being rotatable about the neck to obturate the apertures in the top, or to cause registration of the aper-

tures in the crown with those in the top.

A main object of the present invention is to simplify such construction and facilitate assembly of the components in an end.

Another main object is to simplify the construction of dispensing means mounted on an end of the kind in which the hood is rotatably mounted on the neck and facilitate assembly of such construction.

Accordingly, the present invention comprises an end for a container having a neck through which the commodity in the container, to which the end is to be applied, passes in dispensing from the container, and a hood of resilient material for the neck, having dispensing apertures in the crown thereof, a plurality of widely spaced parallel ribs disposed longitudinally on the neck each shorter than the length of the neck, an inward formation on the hood disposed to snap under the ribs by virtue of the limited

elasticity of the wall of the hood when the hood is forced over the ribs, and means for obturating at will the dispensing apertures in the crown of the hood.

- 5 If a shutter is provided in the assembly, the crown may be moulded with diametrically opposed slots to accommodate the shutter, and the mouth of the neck may be slightly inturned to act as an additional support and as a scraper for the shutter. 10 The end comprising a neck having ribs disposed longitudinally thereof may itself be a moulded component of an assembly according to the invention with or without the apertured top to the neck. 15

The invention is particularly applicable to the construction of assemblies in which the hood rotates on the end to permit dispensing or to obturate the dispensing openings.

- 20 From this aspect the present invention comprises the combination with an end for a container having a neck terminating in a perforated top, of a hood of resilient material for the neck having perforations in the crown adapted to register with those in the hood, the neck having a series of longitudinal ribs and the hood an inward formation disposed to snap under the ribs by virtue of the limited elasticity of the wall of the hood when the hood is forced over the neck of the said end, and thereafter permits relative movement between the hood and crown to obturate or expose the perforations in the crown. 30

- 35 The hood may be formed with an inward rib disposed to project between the ribs on the neck so as to stop rotation of the hood at the fully open and fully closed position. Alternatively the hood may be formed between the inward formation and the crown of the hood with a pair of projections to co-operate with the ribs on the neck to facilitate adjustment of the hood to and from the obturating position. 40

- 45 In assembling constructions according to the invention the hood is forced over the neck, the inward formation on the hood tightly fitting the ribs on the neck, and during such operation the wall of the hood is slightly extended radially and as soon as the hood passes beyond the ribs the wall of the hood contracts to original form, and provides a captive closure over the neck which is difficult to remove since the inward formation on the hood snaps under the ribs, thus interlocking the hood with the neck. 50 55

- 60 In order that the invention may be more clearly understood a preferred embodiment as applied to the construction of a hood intended to rotate about the usual metal neck having an apertured top on a metal end of a container will now be described by way of example.

- 65 In such construction the hood is moulded from a thermoplastic material, such as poly-

thene, and is formed with a continuous rib extending inwardly in a radial direction from the wall of the hood in spaced relation from the bottom of the wall, the wall may be rabbeted on the inside below the inward rib to the bottom of the wall, thus providing a reduced wall thickness below the inward rib. 70

The inside diameter of the inward rib is slightly less than the diameter of the circumscribing circle of the ribs disposed longitudinally on the neck and the reduced thickness at the bottom of the wall of the hood permits a flow of the material from which the hood is moulded thus permitting passage of the hood over the neck whilst the inherent resiliency in the wall above the inward rib assures the interlock desired which practically speaking makes the hood a rotatable captive closure. 75 80 85

The spacing of the dispensing perforations in the crown is related to the spacing of a pair of vertical ribs moulded on the inner face of the wall of the hood which vertical ribs extend from the inward rib to the crown, the vertical ribs on the wall of the hood being of such dimension in height as to project to the neck so that in one direction of rotation one rib of the pair abuts against a rib on the neck and in the other direction of rotation the other rib of the vertical pair abuts against the rib on the neck to define limit positions of movement of the hood. 90 95

The outer face of the hood wall is formed with facets or grooves to facilitate the rotation of the hood when using the assembly. 100

The widely spaced ribs on the neck of the end may be arranged at 120° or 90° apart and have a height from the neck so that they act as distance pieces between the wall of the hood and the neck. 105

The invention comprises the construction of a captive hood for application to an end for a container in the manner described, that is to say, it comprehends a hood for the neck of an end for a container which neck is provided with spaced ribs disposed longitudinally of the neck characterised by a continuous inward rib near the bottom of the hood wall, the rib having an inner diameter slightly greater than the diameter of the circumscribing circle of the ribs in the neck, the wall of the hood being rabbeted in the inside from the inward rib to the bottom edge of the wall. 110 115 120

Although in the embodiment of the invention herein given reference is made to the employment of a thermoplastic material for the hood, the invention can be attained by the use of natural or synthetic rubber or a thermosetting plastic, and if a metal hood is employed the latter will be formed with an inward bead to constitute the inward formation on the hood which co-operates with the 125 130

longitudinal ribs in the neck, in accordance with the invention, to retain the hood in position, and the skirt of the hood below the head may be slit to increase the resiliency of the skirt of the cap.

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